KARAVAYEV, Anatoliy Yemel'yanovich, prof.; TISTROVA, O.N., red.; LARIONOV, G.Ye., tekhn. red.

[Brief history of the development of rotary pumps]. Ocherk po istorii razvitiia lopastnykh nasosov. Moskva, Gos. energ. izd-vo, 1958. 70 p. (MIRA 11:12)

(Pumping machinery)

VLADISLAVLEV, L.A., inzh.; KARAVAYEV, A.Ye., inzh.

Testing of a large hydrogenerator under natural conditions. Elek. sta. 32 no.8:28-36 Ag '61. (MIRA 14:10)
(Turbogenerators--Testing)

SHAYEVICH, A.; ZUBAREV, A.; KARAVAYEV, B.

Engine-cooling system of the ZIL-130 motortruck. Avt. transp. 41 no.9:45-47 S '63. (MIRA 16:10)

USSR/Human and Animals Physiology - (Normal and Pathological). T
Blood. Blood Chemistry.

Abs Jour : Ref Zhur Biol., No 4, 1959, 17277

Author : Karayev, A.I., Mamedova, L.I.

Inst : Academy of Sciences Azerbaydzhan SSR.

Title : The Influence of Stimulation of Interoceptors of Mammary Gland on Biochemical Indexes of Blood in Goats.

Orig Pub : Izv. AN AzerbSSR, 1957, No 4, 143-156

Abstract : In 5 goats the interoreceptors (I) of the mammary gland (MG) were stimulated for 3-5 min. by means of retrograde introduction of milk from a bottle through a catheter placed into the papilla behind sinus lacteus (in subliminal pressure which was created by raising of the bottle with milk to a certain height). The pressure in the udder was controlled with a mercury manometer, connected

Card 1/3

USSR/Human and Animal Physiology - (Normal and Pathological). T
Blood. Blood Chemistry.

Abs Jour : Ref Zhur Biol., No 4, 1959, 17277

with the catheter. Then the milk was let out through the catheter and blood for analysis was taken after 10, 30, and 60 minutes. In some animals the stimulation of I was performed by sterile air, introduced into the holder under pressure which is controlled by the manometer. The stimulation of I of MG induced an increase of the amount of sugar in the blood; in certain cases, an increase of glycogen content, and in other cases - its decrease, which was accompanied by an increase of amount of sugar in the blood. The amount of lactic acid basically increased. The changes of carbohydrate components of the blood showed that under the reflex influence of the indicated stimuli the nutrition of MG improves. The stimulation of I of MG also induced the increase of the amount of total P in the blood; the amount of inorganic P and cholesterol decreased insignificantly; the content of

Card 2/3

Abs Jour : Ref Zhur Biol., No 4, 1959, 17277

KARAVAYEV, B.I.

10

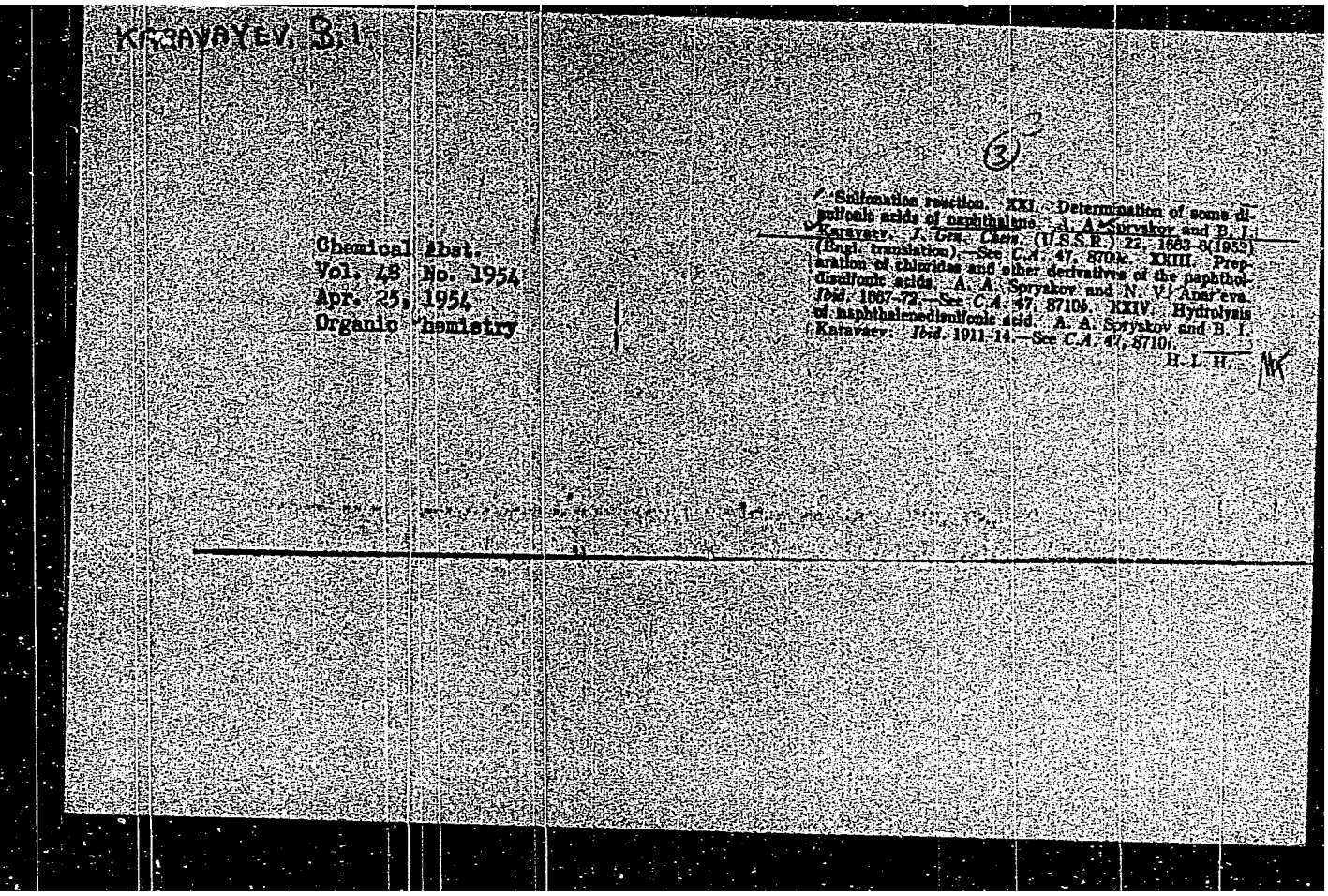
Naphtho[1,2]furazan-3- and 4-sulfonic acids. S. V. Bogdanov and B. I. Karavaev (K. Voroshilov Sci. Research Inst., Moscow). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 1915-18(1951).—*Naphtho[1,2]furazan* (11.8 g.) in 70 ml. 98% H_2SO_4 treated at 20° over 1.5 hrs. with 50 ml. 56% oleum added slowly and the mixt. kept 4 hrs. at 20° gave upon dilu. with much H_2O and addn. of 18 g. Na_2CO_3, 75% *Na sulfonate* (I), needles, sol. in H_2O, insol. in EtOH; *Ba salt*, plates slightly sol. in hot H_2O. The *sulfonyl chloride*, m. 171° (from C_6H_6). The product is the 3-*sulfonic acid*, since oxidation with dichromate-AcOH gives phthalic acid, and the *4-isomer* (II) (the other possibility) has different properties. I boiled with 66% H_2SO_4 10 hrs. gives 50-9% original naphthofurazan. 1,2-ON(HO)$C_6H_3SO_3H$ (as the Na salt) treated with NH_2OH in alk. medium or in the presence of NaOAc, followed by boiling 1 hr. in alk. soln. gave II; *Na salt monohydrate*, needles from aq. EtOH, stable to heating with H_2SO_4; *sulfonyl chloride*, m. 113-13.5°. Reaction with aq. $NH_2OH.HCl$ in aq. medium without base gave yellow *3-nitroso-1-naphthol-4-sulfonic acid*, reduced with $SnCl_2$ to the 3-amino acid, and converted with HNO_2 to 2,4-$(O_2N)_2C_6H_3OH$.

G. M. Kosolapoff

SPRYSKOV, A.A.; KARAVAYEV, B.I.

Sulfonation reaction. XXI. Determination of some disulfonic acids of naphthalene. Zhur. Obshchey Khim. 22, 1620-4 '52. (MLRA 5:9)
(CA 47 no.17:8709 '53)

1. Ivanovsk Chem. Technol. Inst.



KRAVAYEV, B. I.

Chemical Abst.
Vol. 48 No. 1954
Apr. 25, 1954
Organic Chemistry

(3)

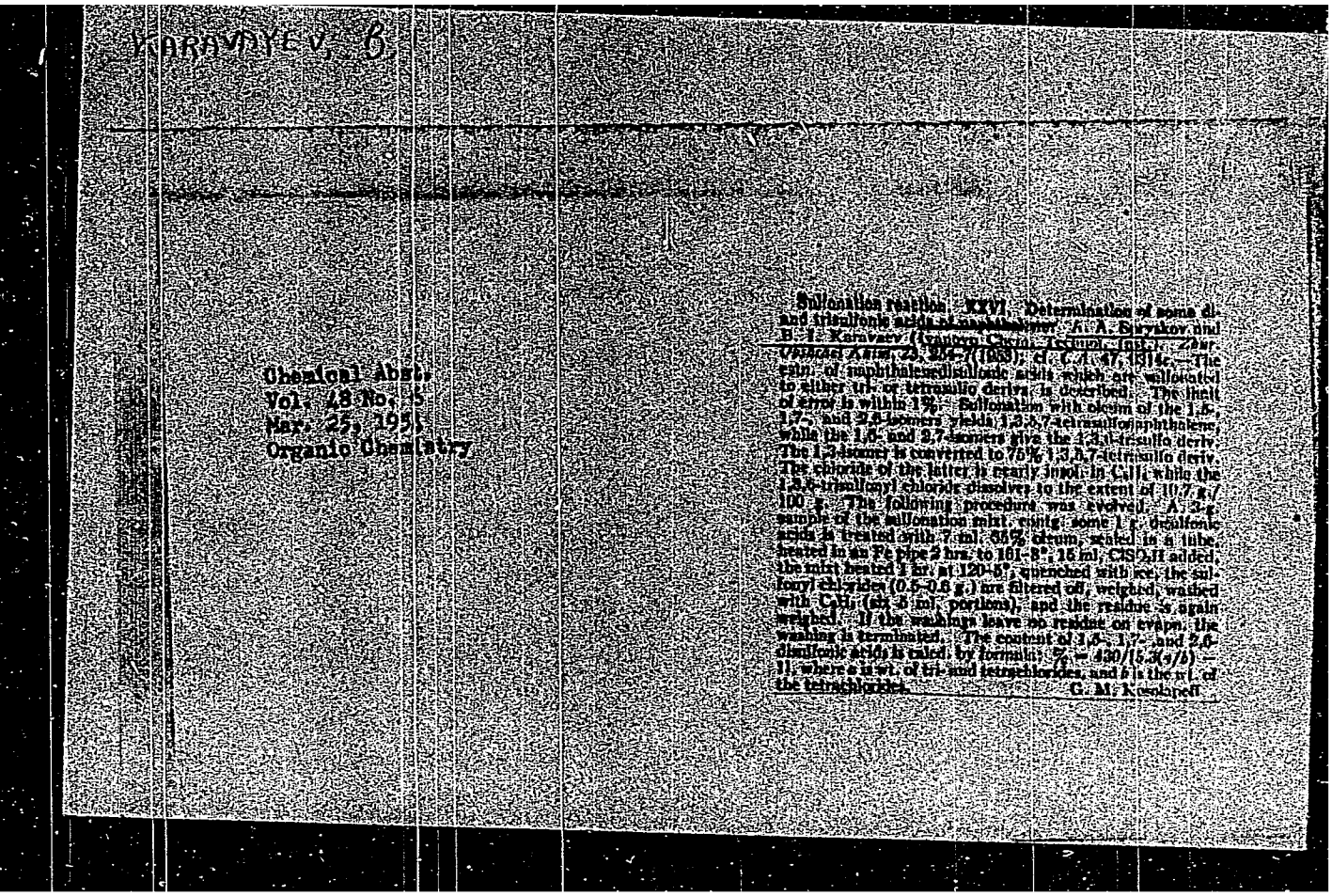
Sulfonation reaction. XXI. Determination of some disulfonic acids of naphthalene. A. A. Spryskov and B. I. Kravayev. *J. Gen. Chem.* (U.S.S.R.) 22, 1663-8(1952) (Engl. translation).—See *C.A.* 47, 8704e. XXIII. Preparation of chlorides and other derivatives of the naphtholdisulfonic acids. A. A. Spryskov and N. V. Anar'eva. *Ibid.* 1667-72.—See *C.A.* 47, 8710b. XXIV. Hydrolysis of naphthalenedisulfonic acid. A. A. Spryskov and B. I. Kravayev. *Ibid.* 1911-14.—See *C.A.* 47, 8710i.

H. L. H.

KARAVAEV, B. I.

Spryskov, A. A., Karavaev, B. I.- "Sulfonation. Part 24. "Hydrolysis of naphthalenedisulfonic acids." (p. 1871)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 10



KARAVAYEV, B.

Chemical Abst.
Vol. 48 No. 5
Mar. 25, 1954
Organic Chemistry

Sulfonation reaction. XXVI. Determination of some di- and trisulfonic acids of naphthalene. A. A. Baryshov and B. I. Karavaev (Voronezh Chem.-Technol. Inst.). Zhur. Obshchei Khim. 23, 274-7 (1953); cf. C.A. 47, 1314c.—The extn. of naphthalenedisulfonic acids which are sulfonated to either tri- or tetrasulfo derivs. is described. The limit of error is within 1%. Sulfonation with oleum of the 1,5-, 1,7-, and 2,6-isomers yields 1,3,5,7-tetrasulfonaphthalene, while the 1,6- and 2,7-isomers give the 1,3,6-trisulfo deriv. The 1,3-isomer is converted to 75% 1,3,5,7-tetrasulfo deriv. The chloride of the latter is nearly insol. in $CaCl_2$ while the 1,3,6-trisulfonyl chloride dissolves to the extent of 10.7 g./100 g. The following procedure was evolved. A 2-g. sample of the sulfonation mixt. contg. some 1 g. disulfonic acids is treated with 7 ml. 65% oleum, sealed in a tube, heated in an Fe pipe 2 hrs. to 161–8°, 15 ml. $ClSO_3H$ added, the mixt. heated 1 hr. at 120–5°, quenched with ice, the sulfonyl chlorides (0.5–0.6 g.) are filtered off, weighed, washed with $CaCl_2$ (at 5 ml. portions), and the residue is again weighed. If the washings leave no residue on evapn. the washing is terminated. The content of 1,5-, 1,7-, and 2,6-disulfonic acids is calcd. by formula: $\% = 430/(5.3(a/b) - 1)$, where a is wt. of tri- and tetrachlorides, and b is the wt. of the tetrachlorides. G. M. Kosolapoff

SPRYSKOV, A.A.; KARAVAYEV, B.I.

Study of the reaction of sulfonation. Part 32. Isomerization of naphthalene disulfonic acids. Zhur.ob.khim. 23 no.7:1182-1188 Jl '53. (MLRA 6:7)

1. Kafedra organicheskoy khimii Ivanovskogo khimiko-tekhnologicheskogo instituta. (Naphthalene) (Sulfonic acids) (Isomerism)

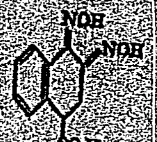
KARAVAYEV, B. I.

Sulfonation reaction. XXXI. Initial ratios of naphthalenedisulfonic acids. A. A. Spryskov and B. I. Karavaev (Ivanovsk Chem. Technol. Inst.). *Zhur. Obshchei Khim.*, 23, 1712-16(1953); cf. *C.A.* 48, 3321f.—At low temp., sulfonation of $C_{10}H_8$ gives a greater yield of the more hydrolyzable isomer. Sulfonation of $C_{10}H_8$ with 99.8% H_2SO_4 10 hrs. gave 85–85.5% 1-$C_{10}H_7SO_3H$ either at 0° or at 50–7° (the yield is given as percent of the total monosulfonation products). Disulfonation did not take place. The 1-isomer was isolated by pptn. with *m*-nitro-*o*-anisidine. Vacuum-dried 1-$C_{10}H_7SO_3H$ was treated with 20.4% oleum 5 hrs. at 50–7°; the products, analyzed as to 1,5-disulfonate content by the benzidine and xylidene method, contained 75% 1,5-, 10% 1,6-, and 15% mixed 1,3- and 1,7-disulfonic acids. Sulfonation of 2-$C_{10}H_7SO_3H$ 5 hrs. at 50–7° with 99.5% H_2SO_4 gave 67% 1,6-, 21% 1,3- and 1,7-, 11% 2,7-, and 1% 2,6-disulfonic acids and 1.2–3.0% trisulfonic acid.

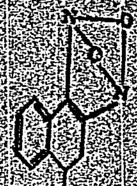
G. M. Kosolapoff

KARAVAYEV, B.I.

1-Naphthoxathiazole. I. The bisulfite compound of naphthofurazan. S. V. Bogdanov and B. I. Karavaev (K. E. Voroshilov Sci. Research Inst. Org. Intermediates and Dyes, Moscow). *Zhur. Obshchei Khim.* 23, 176-81(1953); cf. *C.A.* 47, 2884.—Refluxing the soln. of the bisulfite compd. of 1,2-$ONC_{10}H_6OH$ with a small excess of $NH_2OH.HCl$ and NaOAc 0.5 hr. and acidifying the cooled soln. gave 7 g. I. Oxidation of I in acid medium yields a color-

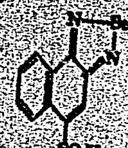


(I)



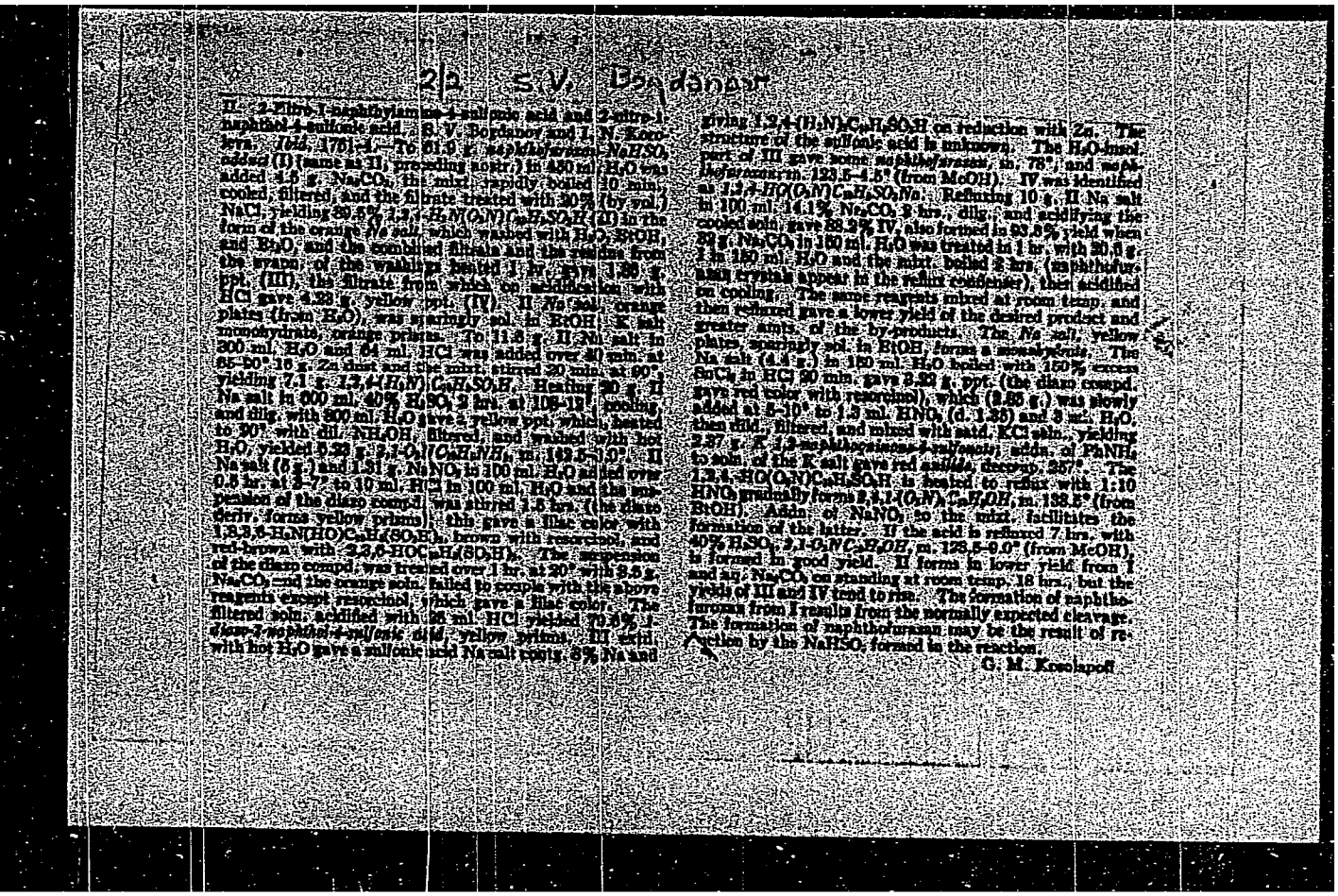
(II)

less substance which contains N and S. Thus 10.8 g. I and 2.2 g. Na_2CO_3 in 100 ml. H_2O heated with 45.5 ml. 59.4% HNO_3 30 min. at 90-5° yielded 9.8 g. II. II can be obtained directly by treatment of the dry-squeezed paste of 1,2-$ONC_{10}H_6OH$ (from 0.2 mole 2-$C_{10}H_7OH$) with 67.4 g. 38.2% $NaHSO_3$ in 1 part $3H_2O$, filtration, addn. of 33 g. NaOAc and 16.8 g. $NH_2OH.HCl$, boiling 0.5 hr., filtration, diln. to 280 ml., addn. over 1.5 hr. to 164 ml. 56.6% HNO_3 in 200 ml. H_2O at 85-8°, and heating 15 min. to 90°; the filtered soln. treated with NaCl (20 g./100 ml.) gave 74% *Na salt* of II. II was formed similarly by oxidation with HNO_2 ($NaNO_2$-HCl) at 95°, or by H_2O_2 at reflux. The *Na salt* of II forms a *trihydrate*; it is stable in acid soln. but on boiling in dil. H_2SO_4 it is cleaved with formation of naphthofurazan, m. 78°. The Na salt yields the corresponding *K salt*, sol. in H_2O, insol. in EtOH; *Ba salt*, $(C_{10}H_6O_4N_2S)_2$-$Ba.3.5H_2O$, plates, sparingly sol. in cold H_2O; *benzidine salt* (from the Na salt and benzidine-HCl salt), plates sparingly sol. in cold H_2O, insol. in EtOH. To 20.8 g. Na salt of I in 150 ml. H_2O was added 120 ml. NH_4OH, then gradually 40 g. Zn dust at 35-50°, and the soln. filtered after 7 hrs. at 50° and acidified, yielding 9.1 g. 1,2,4-$(H_2N)_2C_{10}H_5SO_3H$ *acid* (III), which with HNO_3 gave 1,2-naphthoquinone-4-sulfonic acid, characterized as red 1,2-naphthoquinone-4-sulfonanilide from $PhNH_2$; with phenanthraquinone bisulfite adduct it gave yellow benzophenanthrazinesulfonic acid. The reduction in NaOH with Zn dust gave the same results. III (7.14 g.) in 25 ml. H_2O treated with 7 g. SeO_2 and the brown soln. treated with 20 ml. 34% NaOH gave 10.27 g. *naphthoselenodiazolesulfonic acid* (IV), isolated as the *Na salt*, $C_{10}H_5O_3N_2SSeNa.1.25H_2O$ (anhyd. after heating to 150°). With PCl_5 this gave the *sulfonyl chloride*, yellow, m. 204.5-5.5° (from PhCl). The III obtained by cleavage of the azo compd. derived from PhN_2Cl and 1,4-$H_2NC_{10}H_6SO_3H$ was precisely the same as the III obtained above (cf. Hammick, *et al.*, *C.A.* 30, 1884.).



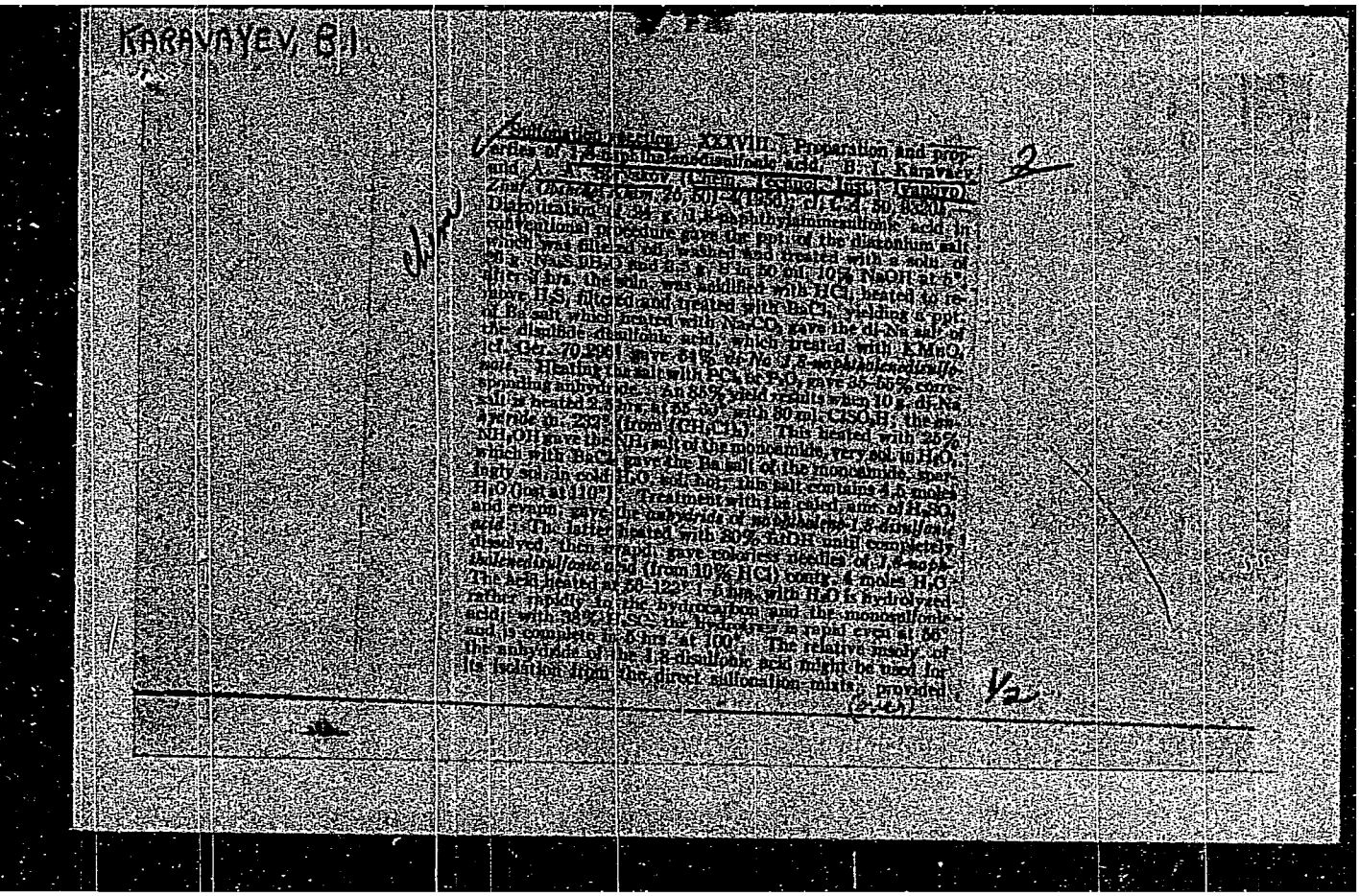
(IV)

over

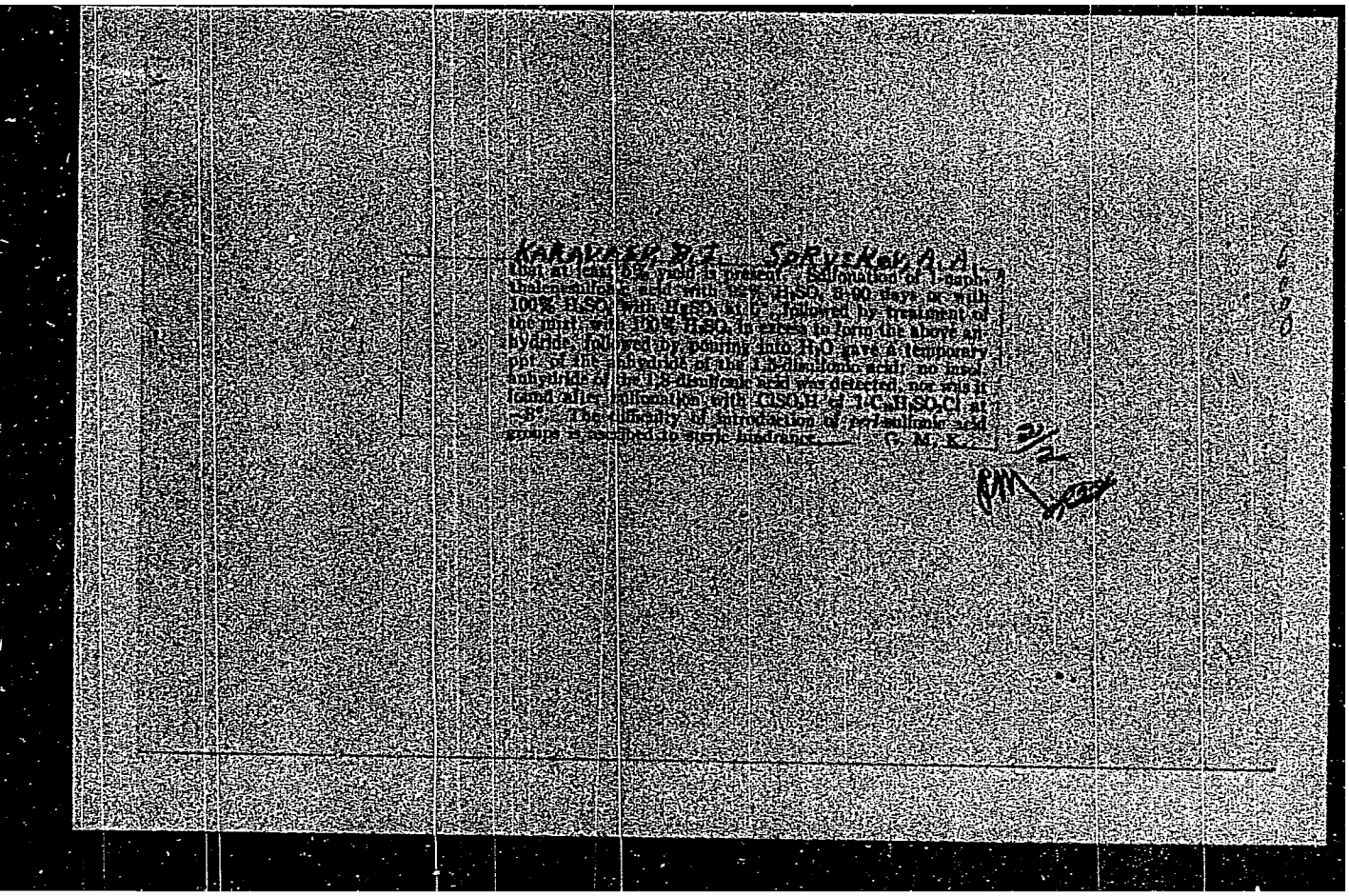


II. 2-Fluro-1-naphthylamine-4-sulfonic acid and 2-nitro-1-naphthol-4-sulfonic acid. S. V. Bogdanov and I. N. Kozhevya. *Ibid.* 1761–4.—To 61.9 g. *naphthionic*-$NaHSO_3$ *added* (I) (same as II, preceding abstr.) in 450 ml. H_2O was added 4.5 g. Na_2CO_3, the mixt. rapidly boiled 10 min., cooled, filtered, and the filtrate treated with 20% (by vol.) NaCl, yielding 89.6% *1,2,4-*$H_2N(O_2N)C_6H_3SO_3H$ (II) in the form of the orange *Na salt*, which, washed with H_2O, EtOH, and Et_2O, and the combined filtrate and the residue from the evapn. of the washings heated 1 hr. at 70° in 1.30 g. ppt. (III), the filtrate from which on acidification with HCl gave 4.33 g. yellow ppt. (IV). II *Na salt*, orange plates (from H_2O), was sparingly sol. in EtOH; K salt monohydrate, orange prisms. To 11.8 g. II Na salt in 300 ml. H_2O and 64 ml. HCl was added over 30 min. at 65–80° 16 g. Zn dust and the mixt. stirred 20 min. at 90°, yielding 7.1 g. *1,2,4-*$H_2N(HO)C_6H_3SO_3H$. Heating 20 g. II Na salt in 900 ml. 40% H_2SO_4 2 hrs. at 105–110°, cooling, and dilg. with 800 ml. H_2O gave a yellow ppt. which, heated to 90° with dil. NH_4OH, filtered, and washed with hot H_2O, yielded 5.39 g. *2,1-*$O_2NC_6H_3NH_2$, m. 182.5–3.0°. II Na salt (8 g.) and 1.31 g. $NaNO_2$ in 100 ml. H_2O added over 0.5 hr. at 3–7° to 10 ml. HCl in 100 ml. H_2O and the suspension of the diazo compd. was stirred 1.5 hrs. (the diazo deriv. forms yellow prisms); this gave a lilac color with *1,3,3,6-*$H_2N(HO)C_6H_2(SO_3H)_3$, brown with resorcinol, and red-brown with *2,3,6-*$HOC_6H_3(SO_3H)_2$. The suspension of the diazo compd. was treated over 1 hr. at 20° with 8.5 g. Na_2CO_3 and the orange soln. failed to couple with the above reagents except resorcinol, which gave a lilac color. The filtered soln. acidified with 20 ml. HCl yielded 70.8% *1-diazo-2-naphthol-4-sulfonic acid*, yellow prisms. III acidified with hot H_2O gave a sulfonic acid Na salt resin, 8% Na and giving *1,2,4-*$(H_2N)C_6H_3SO_3H$ on reduction with Zn. The structure of the sulfonic acid is unknown. The H_2O-insol. part of III gave some *naphthofurazan*, m. 78°, and *naphthofurazan-m.* 123.5–4.5° (from MeOH). IV was identified as *1,2,4-*$HO(O_2N)C_6H_3SO_3Na$. Refluxing 10 g. II Na salt in 100 ml. 14.1% Na_2CO_3 3 hrs., dilg., and acidifying the cooled soln. gave 88.2% IV, also formed in 93.8% yield when 20 g. Na_2CO_3 in 180 ml. H_2O was treated in 1 hr. with 20.6 g. I in 150 ml. H_2O and the mixt. boiled 2 hrs. (naphthofurazan crystals appear in the reflux condenser), then acidified on cooling. The same reagents mixed at room temp. and then refluxed gave a lower yield of the desired product and greater amts. of the by-products. The *Na salt*, yellow plates, sparingly sol. in EtOH, forms a *monohydrate*. The Na salt (4.4 g.) in 150 ml. H_2O boiled with 150% excess $SnCl_2$ in HCl 90 min. gave 2.22 g. ppt. (the diazo compd. gave red color with resorcinol), which (8.85 g.) was slowly added at 5–10° to 1.5 ml. HNO_3 (d. 1.35) and 3 ml. H_2O, then dild., filtered, and mixed with satd. KCl soln., yielding 2.27 g. K *2,2-naphthoquinone-1-sulfonate*; addn. of $PhNH_2$ to soln. of the K salt gave red *anilide*, decomp. 257°. The *1,2,4-*$HO(O_2N)C_6H_3SO_3H$ is heated to reflux with 1:10 HNO_3 gradually forms *2,1,3-*$(O_2N)_2C_6H_2OH$, m. 138.5° (from EtOH). Addn. of $NaNO_2$ to the mixt. facilitates the formation of the latter. If the acid is refluxed 7 hrs. with 40% H_2SO_4, *2,1-*$O_2NC_6H_3OH$, m. 128.5–9.0° (from MeOH), is formed in good yield. II forms in lower yield from I and aq. Na_2CO_3 on standing at room temp. 18 hrs., but the yields of III and IV tend to rise. The formation of naphthofurazan from I results from the normally expected cleavage. The formation of naphthofurazan may be the result of reduction by the $NaHSO_3$ formed in the reaction.

G. M. Kosolapoff



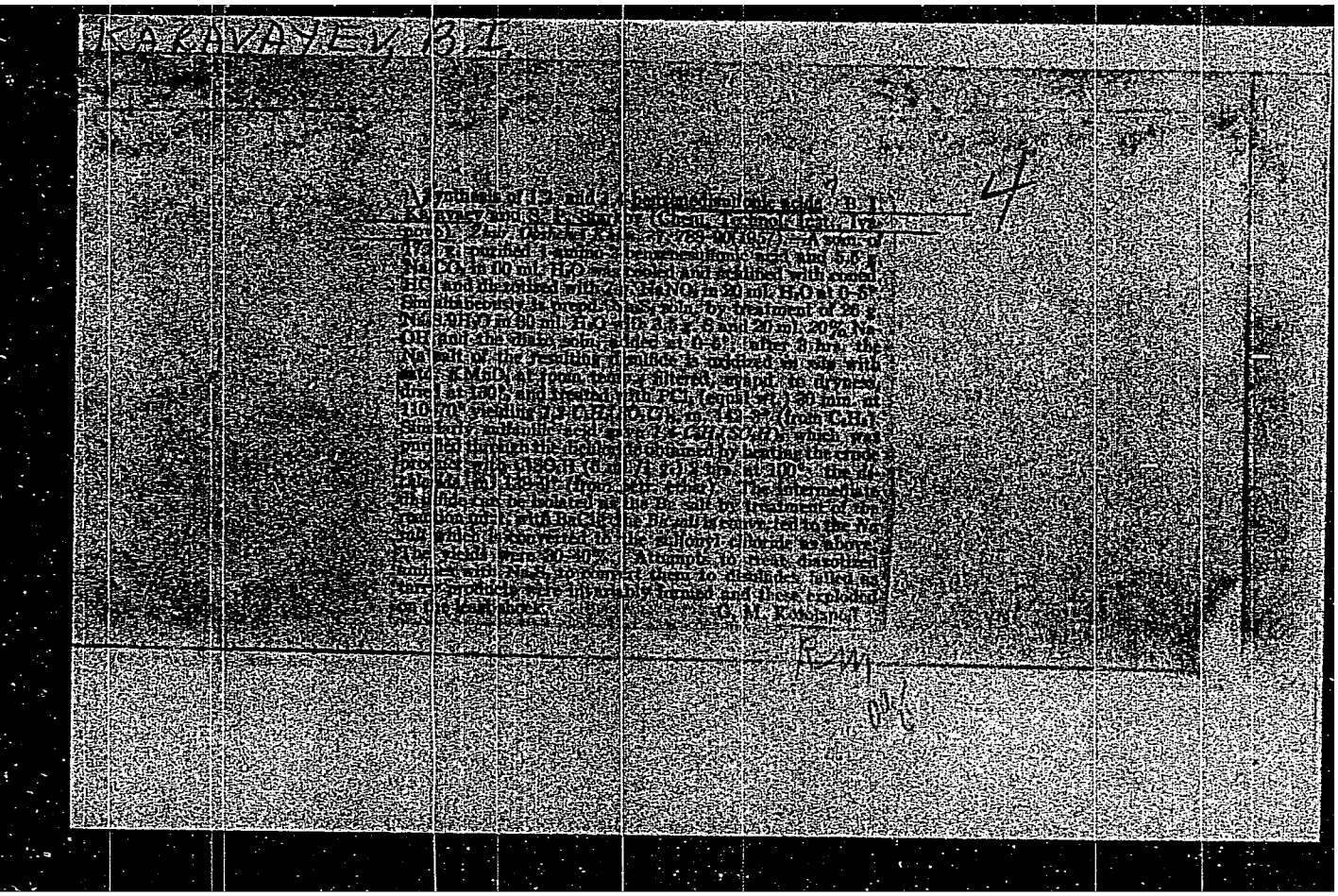
KARAVAYEV B.I.



KARAVAYEV, B.I.; SPRYSKOV, A.A.

Study of sulfonation. Part 39. Hydrolysis and isomerization of naphthalenetrizulfonic acids. Zhur.ob.khim. 26 no.7:2002-2005 Jl '56. (MLRA 9:10)

1. Ivanovskiy khimiko-tekhnologicheskiy insitut.
(Naphthalenetrisulfonic acid)



KARAVAEV, B.I.

4

KARAVAYEV, B. I.

Quantitative determination of isomeric phenolsulfonic acids. Izv. vys. ucheb. zav.; khim. i khim. tekh. 5 no.5:766-769 '62. (MIRA 16:1)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra organicheskoy khimii.

(Phenolsulfonic acid)

SPRYSKOV, A.A.; BARVINSKAYA, I.K.; KARAVAYEV, B.I.

Orientation during substitution in the aromatic series. Part 12: Orientation of a nitro group during low temperature nitration of nitrobenzene. Zhur.ob.khim. 33 no.6:1885-1893 Je '63. (MIRA 16:7)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
(Nitrobenzene) (Nitration)

MINKIN, M.L., kand.tekhn.nauk; KHMEL'NITSKIY, E.Ye.; SHAYEVICH, A.G.; KARAVAYEV, B.I.; PAPIN, A.A.

Increasing the effectivness of cooling systems for automobile engines. Avt. prom. no.2:10-13 F '61. (MIRA 14:3)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut i Moskovskiy avtozavod imeni Likhacheva.
(Automobiles--Engines--Cooling)

Karavayev F. M.

USSR/Nuclear Physics - Instruments and Installations. Methods of Measurement and Investigation C-2

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33875

Author : Aglintsev, K. K., Karavayev, F. M., Konstantinov, A. A., Ostromukhova, C. P., and Khol'nova, Ye. A.

Institution : None

Title : Standardization of radioactive compounds

Original Periodical : Atomnaya Energiya, 1956, No 2, 55-62

Abstract : Description of methods and apparatus used in the All-Union Scientific-Research Institute of Metrology imeni D. I. Mendeleyev for precise measurements of many dosimetric characteristics of radioactive compounds: activity (calorimetric and ionization methods and the method of the absolute β count), γ-equivalent (ionization chamber with a solid angle of 4π) and the intensity of the dose of λ-radiation (normal ionization chamber). The measurement limits and accuracies of the results are indicated.

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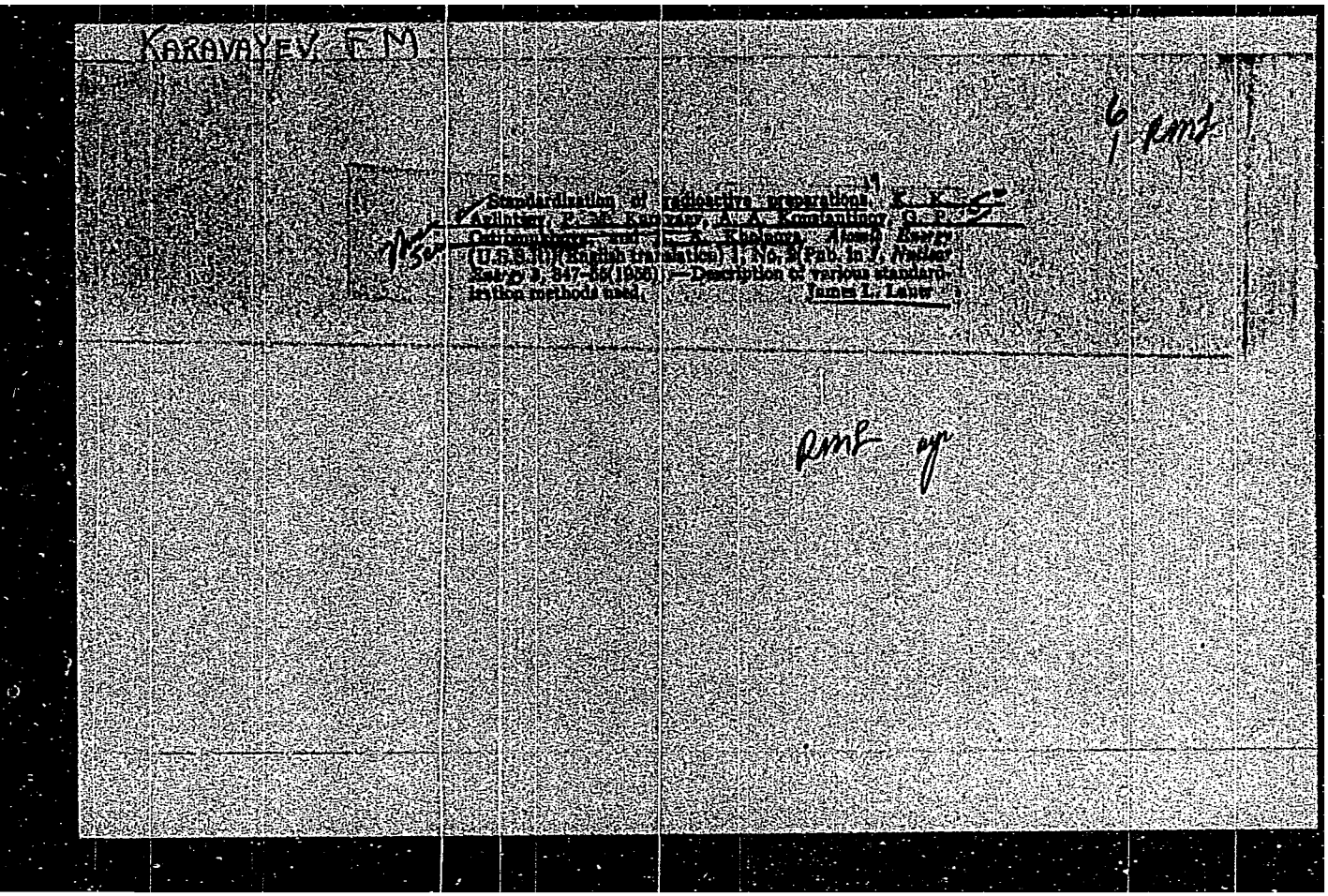
A-U. Sci Res Inst of Metrology



AGLINTSEV, K.K.; KARAVAYEV, F.M.

Study of the standard arrangement for measuring gamma equivalents of radioactive preparations. Trudy VNIIM no.30:37-52 '57. (MIRA 12:1)

(Gamma rays--Measurement)

KARAVAYEV, F.M.

Measurements of low-activity preparations. Trudy VNIIM no.30: 53-60 '57. (MIRA 12:1)
(Gamma rays--Measurement)

KARAVAYEV, F.M.

Effect of radiation filtration on the gamma equivalents of radioactive isotopes. Trudy VNIIM no.30:61-69 '57. (MIRA 12:1)

(Gamma rays--Measurement) (Radioisotopes)

S/112/59/000/012/052/097
A052/A001

24.6720

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 12, p. 150, # 24940

AUTHORS: Karavayev, F.M., Rusinova, S.A.

TITLE: Precise Measurements of Radioactive Half-Life 19

PERIODICAL: Tr. Vses. n.-i. in-ta metrol., 1957, No. 30 (90), pp. 132-142

TEXT: Precise measurements of the radioactive half-life by the method of successive measurements and by the method of differential ionization chamber are analyzed. An installation with the differential chamber is described in detail. The convenience of the method of differential chamber for a quick and relatively accurate measurement of half-life of long-lived elements is pointed out. Half-life values of radioactive isotopes Na^{24}, Zn^{65}, Cr^{51} and Ag^{110} are measured. The results obtained are in a good agreement with the most precise data of other authors, being superior to them by accuracy in some cases. There are 28 references. N.G.Z. V/B

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

21(3) SOV/112-59-3-5251

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 3, p 135 (USSR)

AUTHOR: Aglintsev, K. K., Balon, Z. P., Dzhelepov, B. S., Karavayev, F. M., Karamyan, A. S., Konstantinov, A. A., Ostromukhova, G. P., Prokof'yev, P. T., Rusinova, S. A., Sumbayev, O. I., Khol'nova, Ye. A., Shestopalova, S. A., Yudin, M. F., and Yaritsyna, I. A.

TITLE: Metrology of Penetrating Radiations
(Metrologiya pronikayushchikh izlucheniy)

PERIODICAL: V sb.: Atomn. energiya v mirnykh tselyakh. Gosenergoizdat, 1957, pp 145-181

ABSTRACT: Projects are described of the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii (All-Union Scientific-Research Metrology Institute) imeni D. I. Mendeleyev on standardization of measures in the ionizing-radiation field, and on the construction of standard and reference outfits for reproducing the fundamental units in the whole range of energies and intensities of radiations of all types. The following outfits are described: (1) a standard reproducing

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Metrology of Penetrating Radiations

the roentgen in the range of 40-300 Kev; (2) a reference outfit for measuring in roentgens of electromagnetic-radiation doses having the quantum energy of 300-1,500 Kev; (3) an outfit for measuring in roentgens the electromagnetic-radiation doses with quantum energy of 3-20 Kev with an error of 1%; (4) two standard outfits for measuring radium gamma-equivalents; (5) differential lead-ball gamma-calorimeters for measuring the activity of various preparations on the basis of their gamma radiation; (6) an isothermal calorimeter operating on the principle of liquid-nitrogen evaporation for measuring the activity of beta preparations; (7) a differential alpha-calorimeter for measuring the activity of radium preparations. An activity-measurement method by counting the number of particles emitted by a preparation is being developed in two directions: counting of particles in a definite solid angle and the same in the total solid angle by means of "4π-counters." The beta-particle counter within a definite angle permits measuring preparations with an activity of 10^{-8} - 10^{-5} curie with an error of 4-6%. Two alternate designs of "4π-

Metrology of Penetrating Radiations

counters" are described. One of them permits measuring beta preparations with an activity of 10^{-10} -5×10^{-8} curie with an error of 2-4%, and the second, 5×10^{-11} -5×10^{-7} curie with an error of 1-3%. The outfits have been built for measuring neutron streams from 10^{8} down to a few tens of neutrons per sec. A gamma-spectrometer "Elotron" with an improved focusing has been built for investigation of gamma spectra in the energy range of 600-3,000 Kev. To conduct investigations in the range of 120-1,300 Kev, a 2-meter long crystal-diffraction gamma-spectrometer of the Dumond spectrometer type has been built. Also, a magnetic spectrometer analyzing photoelectrons has been built for the range of 200-700 Kev. Measuring the half-life from a few hours to a few years is made by two methods: the method of successive measurements of gamma-equivalent preparations and the differential-chamber method. The results of half-life measurements for a number of isotopes are tabulated.

N.G.Z.

S/123/60/000/009/014/017
A004/A001

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1960, No. 9, p. 258, # 45141

AUTHORS: Aglintsev, K.K., Karavayev, F.M., Karamyan, A.S., Konstantinov, A.A., Ostromukhova, G.P., Khol'nova, Ye.A., Yudin, M.F., Yaritsyna, I.A.

TITLE: Achievements and Development Prospects of the Metrology of Ionizing Radiation

PERIODICAL: Tr. Vses. n.-i. in-ta metrol., 1958, No. 33 (93), pp. 135-158

TEXT: The authors investigate the work which was carried out up to 1958 at the VNIIM, ensuring the unity of measures and devices in the field of ionizing measurements. Checking systems for the measurement of activity of radioactive preparations (the method of absolute counting of the number of charged particles and photons, emitted by the preparation, the ionizing chamber method and the calorimetric method) and also for the measurement of γ-equivalents are presented. The authors describe the methods of absolute measurements of neutron fluxes which can be put at the basis of the calibrating method. They enumerate

Card 1/2

KARAVAYEV, F. M., AGLINTSEV, K. K., BALON, Z. P.

"Etalonmessungen im Gebiete ionisierender Strahlungen"

report presented at the
Intl. Measurements Conference (IMEKO) Budapest, 24-30 November ~~1960~~ 1958

KARAVAYEV, F. M., AGLINTSEV, K.K., BALOD, E.P., KONSTANTINOV, A.A., OSTROUMOV, G.P.
NIKOLAYEVA, Ye. A., Leningrad

"Standardizing X-Rays and nuclear radiation" (Section X)

report submitted for Measurement and Automation, Scientific Society for (Hungarian) Intl. Measurements Conference - Budapest, Hungary, 28-30 Nov. 58

21(8) SOV/115-59-3-24/29

AUTHORS: Gorshkov, G.V., Karavayev, F.M., and Shimanskaya, N.S.

TITLE: The Determination of the Radium Content in Radium Compounds (Ob opredelenii soderzhaniya radiya v radiyevykh preparatakh)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 3, pp 52-53 (USSR)

ABSTRACT: The radium content of radium compounds is mainly determined by the ionization method, or more exactly, its gamma equivalent is determined. The ionization effect of the radiation of the compound under investigation is compared to that of a standard with a known radium content. At VNIIM, two state standards, X and XI, are used, whose radium content was set equal (for 1957) to 29.37 and 14.27 mg radium elements. The self-absorption of the gamma radiation within the radiation source itself is not considered sufficiently. Although lead filters are used, which are 2 cm thick at VNIIM, whereby the soft gamma radiation is eliminated, the error can attain a consider-

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The Determination of the Radium Content in Radium Compounds

able magnitude, if the differences of self-absorption are not taken into consideration. The authors determined the accuracy of contemporary ionization methods used for determining the radium content. For this purpose, three pure radium compounds were available which were to be used for the calorimetric determination of the radium half decay period (Ra^{226}). The results of these investigations and measurement results of VNIIM and the Radiyevyy institut AN SSSR -RIAN- (Radium Institute AS USSR) are shown in one table. The calculations performed by the authors show that the difference of the self-absorption of the gamma radiation of radium in 15 mg $RaCl_2$ and 150 mg $RaBr_2$ is of a considerable magnitude. The effective self-absorption in standard XI was found to be 0.9% while it was 1.7% in 150 mg $RaBr_2$, whereby the difference was 0.8%. The authors recommend to establish new standards in the USSR with a radium content of 1, 5, 10, 25, 100, 200, 500 mg, whereby the error

The Determination of the Radium Content in Radium Compounds

caused by the different self-absorption were reduced to a greater extent. In addition they recommend the application of lead filters with thicknesses of not less than 1-1.5 cm. Until new state standards are created the authors recommend the application of a formula for obtaining an accuracy of 0.3-0.5%

$$p = I\,(1.006 + 3.6 \cdot 10^{-3}\,\sqrt[3]{I})$$

where I is the milligram-equivalent of the compound under investigation. A footnote says that the standards X and XI are regarded also as secondary international standards. There are: 1 table and 6 references, 3 of which are Soviet and 3 English.

Card 3/3

SOV/115-59-5-26/27

21(3)

AUTHOR: Karavayev, F.M.

TITLE: Ionization Camera for Absolute Measuring of the Activity of Radioactive Preparations

PERIODICAL: Izmeritel'naya Tekhnika, 1959, Nr 5, pp 60-62 (USSR)

ABSTRACT: The author states, that the absolute measuring of β-radical substance is done with a special ionization camera. It is a small camera and for this reason it can be used only to measure sufficiently strong radial preparations. The theory and calculation of the camera are shown in Refs.1,2,3,4. A spheric ionization camera has been constructed, which consists of two concentric aluminum balls. Each one of them consists of two hemispheres. The inner radiuses are 130 and 150 mm. The walls are 4.99 mm thick and the clearance between the balls is ca. 10 mm. While measuring active preparations from 0.1 mcurie to 2 curie, the ionization current runs from 10^{-13} to 10^{-8} A. The measuring accuracy for the ionization current is 0.5%. Excluding all systematic errors, a maximal accuracy for radio-activity with an inaccuracy of 7 - 10% can be

Card 1/2

Ionization Camera for Absolute Measuring of the Activity of Radioactive Preparations

attained. An example is calculated. There are 1 diagram, 3 graphs, 1 layout and 10 references, 7 of which are Soviet and 3 English.

S/081/62/000/005/056/112
B156/B108

AUTHORS: Drichko, A. F, Zhukovskaya, L. P., Karavayev, F. M., Rusinova, S. A.

TITLE: New radium working standards

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 397, abstract 5K4 (Tr. in-tov Kom-ta standartov, mer i izmerit. priborov pri Sov. Min. SSSR, no. 55 (115), 1961, 81 - 89)

TEXT: New radium working standards are described which have radium-element contents of 1 - 200 mg. These are compared with the USSR State Radium Standard. [Abstracter's note: Complete translation.]

Card 1/1

KARAVAYEV, F.M.; YUDIN, M.F.

New state standard 8848-63 "Radioactivity and ionization radiation units." Izm.tekh. no.6:51-53 Je '64. (MIRA 17:12)

DRICHKO, A.F.; KARAVAYEV, F.M.; KUL'KOVA, L.P.; KHOL'NOVA, Ye.A.

Working standards and first-order standard γ-emitters from Co^{60}. Nov. nauch.-issl. rab. po metr. VNIIM no.2:11-13 '64. (MIRA 18:4)

DRICHK(, A.F.; ZHUKOVSKAYA, L.P.; KARAVAYEV, F.M.; RUSINOVA, S.A.

A unit of the UPGI-1 type. Nov. nauch.-issl. rab. po metr. VNIIM no.2:13-18 '64. (MIRA 18:4)

DRICHKO, A.F.; KARAVAYEV, F.M.; RUSINOVA, S.A.

New units for the comparison of reference and standard radium emitters. Nov. nauch.-issl. rab. po metr. VNIIM no.2:18-21 '64. (MIRA 18:4)

L 34783-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l) IJP(c)

ACC NR: AR6017212 SOURCE CODE: UR/0058/65/000/012/A058/A058

AUTHOR: Karavayev, F. M.

TITLE: Measurement of activity of radioactive sources

SOURCE: Ref. zh. Fizika, Abs. 12A507

REF SOURCE: Tr. in-tov Gos. kom-ta standartov, mer i izmerit. priborov SSSR, vyp. 76 (136), 1965, 160-174

TOPIC TAGS: radioactive source, radioactivity measurement, radium, scientific standard, nuclear physics research facility

ABSTRACT: A brief survey of the work done in the VNIIM radiometric laboratory (mostly in the post-war years) in the field of measurements of radium standards, duplication of the unit of activity of radioactive sources, and transfer of the dimension of the unit of activity from standards to working sources. New problems faced by the laboratory in the field of scientific research and development of new standard and model measuring installations are indicated. Bibliography, 22 titles. L. S.
[Translation of abstract]

SUB CODE: 20

Card 1/1

KARAVAYEV, G.

Building the Stalin Palace of Culture and Science in Warsaw. Biul.stroi. tekh.10 no.16:40 N '53. (MLRA 6:11)

1. Upravleniye stroitel'stva Dvortsa kul'tury i nauki v Varshave. (Warsaw--Building) (Building--Warsaw)

KARAVAYEV, G.A., inzhener.

Building the Palace of Culture and Science in Warsaw. Stroi.prom.31 no.12:4-10 D '53. (MLRA 7:1)
(Warsaw--Building) (Building--Warsaw)

KARAVAYEV, G.

Large-block and large-panel construction in the territory of the Sverdlovsk Economic Council. Zhil.stroi. no.4:2-5 '59.
(MIRA 12:6)

1. Zamestitel' predsedatelya Sverdlovskogo sovnarkhoza.
(Sverdlovsk Province--Apartment houses)

KARAVAYEV, G.

Making and using porous cinder concretes. Zhil.stroi. no.10:11-12 '59. (MIRA 13:2)
(Sverdlovsk Province--Apartment houses)
(Cinder blocks)

KARAVAYEV, G.A.

First steps in cooperation in building industrial enterprises in an economic region. Prom. stroi. 37 no.1:8-11 Ja '59. (MIRA 12:1)

1.Zamestitel' predsedatelya Sverdlovskogo sovnarkhoza.
(Sverdlovsk Province--Construction industry)

KARAVAYEV, G.A.

In support of the further use of prefabrication techniques in industrial construction. Prom. stroi. 39 no.9:2-9 '61. (MIRA 14:10)

1. Pervyy zamestitel' predsedatelya Gosstroya SSSR.
(Industrial buildings)

KARAVAYEV, G.A.

Prospects for the development of precast reinforced concrete.
Bet. i zhel.-bet. no.1:1-7 Ja '62. (MIRA 15:4)
(Precast concrete)

KARAVAYEV, G.

For a drastic improvement of the control level exercised by Construction Bank branches. Fin. SSSR 23 no.12:14-25 D '62. (MIRA 16:1)

1. Predsedatel' Pravleniya Stroybanka SSSR.

(Construction industry—Auditing and inspection)
(Banks and banking)

KARAVAYEV, G.A., glav. red.

[Encyclopedia of present-day technology; building]
Entsiklopediia sovremennoi tekhniki; stroitel'stvo. Moskva,
Sovetskaia Entsiklopediia. Vol.2. 1964. 472 p.
(MIRA 17:12)

KARAVAYEV, G.A., glav. red.

[Building; an encyclopedia of present-day technology] Stroitel'stvo; entsiklopediia sovremennoi tekhniki. Moskva, Sovetskaia entsiklopediia. Vol.3. 1965. 591 p. (MIRA 18:12)

L 04796-67 EWT(1) LIP(c) AT
ACC NR: AP6024480 SOURCE CODE: UR/0181/66/008/007/2143/2148

AUTHOR: Karavayev, G. F.; Poplavnoy, A. S.

50
49
B

ORG: Tomsk State University (Tomskiy gosudarstvennyy universitet)

TITLE: Investigation of the energy spectrum of electrons in semiconductor compounds with a chalcopyrite lattice, using perturbation theory

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2143-2148

TOPIC TAGS: energy band structure, crystal symmetry, perturbation theory, group theory, zinc compound, valence band

ABSTRACT: The authors developed a method for calculating the structure of the energy bands of compounds $A^{III}B^{IV}C_2^V$ and $A^{I}B^{III}C_2^{VI}$. The method is similar to the perturbation method developed by F. Herman (J. Phys. Chem. Sol. v. 8, 380, 1959 and earlier) and is based on the results of a group-theoretical investigation of the lattices of zinc blende and chalcopyrites, as well as earlier results by one of the authors (Karavayev, with V. A. Chaldyshev, Izv. Vuzov SSSR, Fizika, v. 5, 103, 1963), where compatibility relations were obtained for the representations of the symmetry groups of these lattices. The structure of the energy spectrum of $A^{II}B^{V}$ is taken to be as the unperturbed structure. The perturbation potential is defined as the difference between the potential of the chalcopyrite and the potential of the zinc blende. The

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L 04796-67
ACC NR: AP6024480

perturbation potential is expressed in the form of symmetrical and antisymmetrical components relative to the employed permutation operators. The changes produced in the spectrum by the perturbation potential are evaluated first with spin-orbit interaction neglected, after which corrections for the spin-orbit and crystal interactions are introduced. It is shown that the effect of the potential is manifest for the most part in second order of perturbation theory. The spin-orbit interaction causes the greatest changes in the structure of the top of the valence band, and cannot be neglected in the case when the crystalline splitting is small. The authors thank V. A. Chaldyshev for discussions. Orig. art. has: 3 figures and 6 formulas

SUB CODE: 20/ SUBM DATE: 22Dec65/ ORIG REF: 009/ OTH REF: 008/

Card 2/2 afs

CHALDYSHEV, V.A.; KARAVAYEV, G.F.

Structure of the energy spectrum of chalcopyrite type crystals. Izv. vys. ucheb. zav.; fiz. no. 2:28-30 '64. (MIRA 17:6)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.

S/181/62/004/012/018/052
B104/B102

AUTHORS: Karavayev, G. F., Kudryavtseva, N. V., and Chaldyshev, V. A.

TITLE: The structure of the electron energy spectrum in Th_3P_4-type crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3471-3481

TEXT: The covariant representation of the symmetry properties of Th_3P_4-type crystals according to E. Wigner (Group Theory and its Application to the Quantum Mechanics of Atomic Spectra, Academy Press, 1959) is applied to studying the effect that spatial symmetry and isotropy of Z_3Se_4-type compounds exerts on the electron energy spectrum. For the symmetry group T_d^6 of the lattice type investigated and with type Γ_c^v of the Brillouin zone, the dispersion laws near the symmetry points of the Brillouin zone are derived in parametric form on the basis of solutions to the algebraic equation $a_{\mu\nu}(\vec{k})c_\nu = \varepsilon(\vec{k})c_\mu$. The method used was suggested by V. A.

Card 1/2

KARAVAYEV, G. F.

Reaction of selenides of gallium and a lanthanide (erium and samarium of the type $A_2^{III}B_3^{VI}$. G. Kh. Efendiyev, E. Sh. Karayev, I. O. Nasilov.

Solid solutions in the quasibinary systems Ga_2S_3-Ga_2Te_3 and Ga_2S_3-Ga_2Se_3. P. G. Rustanov, B. I. Mardakhayev, E. Melikova, M. Alidzhanov, M. Safarov. (Presented by G. Kh. Efendiyev--10 minutes).

Chemical bonding, structure of the energy zones and some properties of semiconducting compounds of rare earth elements with selenium. G. F. Karavayev (10 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

CHALDYSHEV, V.A.; KUDRYAVTSEVA, N.V.; KARAVAYEV, G.F.

Electron energy spectrum in crystals. Part 5: Loaded corepresentations. Izv.vys.ucheb.zav.;fiz.no.2:46-52 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.

(Crystallography, Mathematical) (Electrons--Spectra)

CHALDYSHEV, V.A.; KARAVAYEV, G.F.

Valence band structure of chalcopyrite type compounds. Izv. vys. ucheb. zav.; fiz. no.5:103-112 '63. (MIRA 16:12)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

L 1821-65 EWT(1)/T/EEC(b)-2 IJP(c)/AFWL/SSD/ASD(a)-5/ESD(dp)

ACCESSION NR: AP5000669 S/0181/64/006/012/3676/3683

AUTHOR: Karavayev, G. F.

TITLE: Selection rules for indirect transitions in crystals

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3676-3683

TOPIC TAGS: group theory, selection rule, indirect transition, space time symmetry, crystal symmetry

ABSTRACT: After briefly pointing out some of the shortcomings of the earlier approaches, the author derives simple formulas for the calculation of the selection rules for indirect transitions in crystals, using as a basis the theory of co-representation of the complete space-time symmetry group of the Hamiltonian (E. Wigner, Group Theory and Its Application to the Quantum Mechanics of Atomic Spectra, Academic Press, 1959). It is claimed that this approach makes it possible to take into account in a unified fashion the

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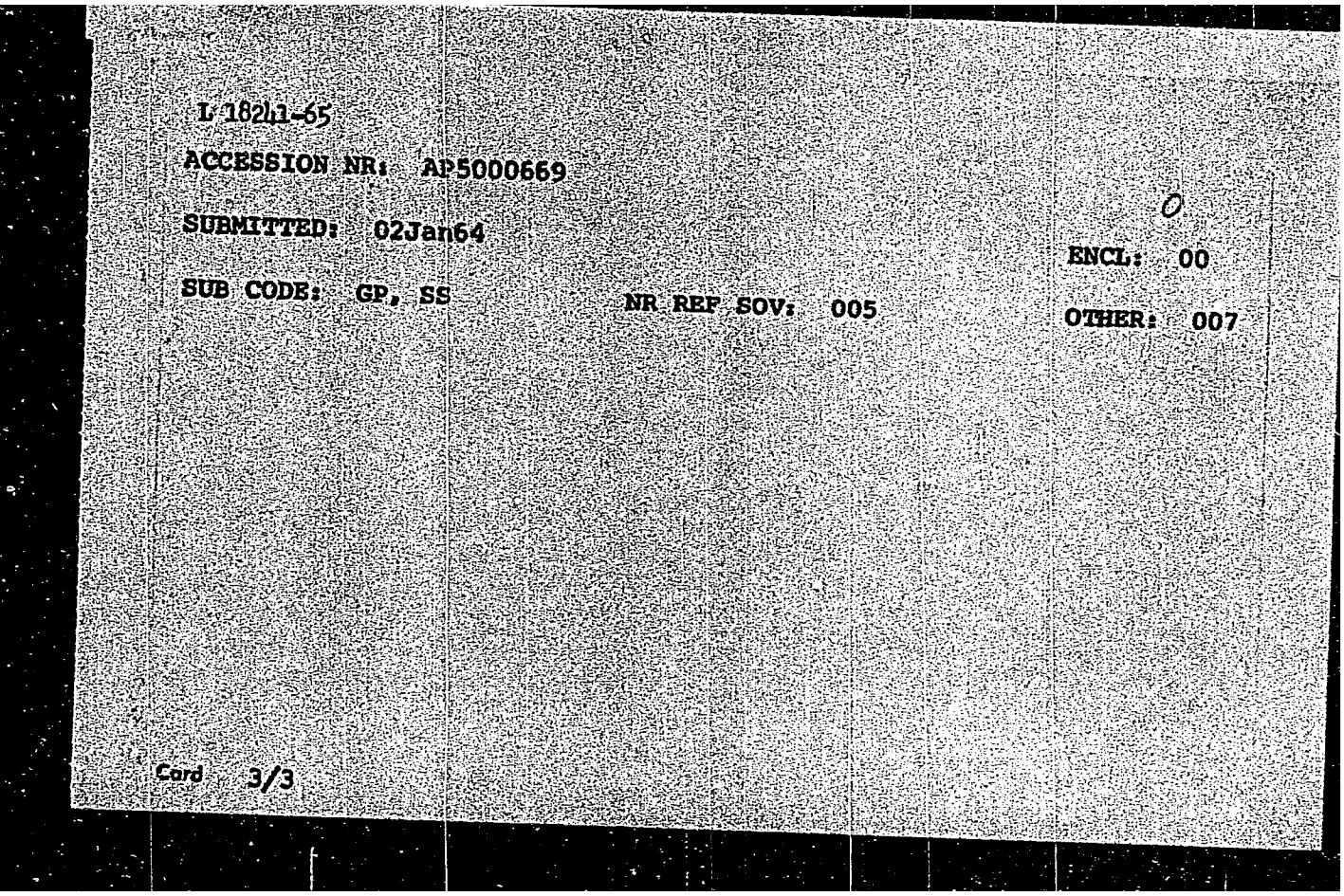
ACCESSION NR: AP5000669

space and time symmetry of the problem, and that an appreciable simplification of the final formulas is attained. The symmetry of the unperturbed Hamiltonian under the time reversal operation is considered. The results are compared with those by others. It is concluded that the obtained formulas are equally valid in the case when the unitary part of the Hamiltonian is a simple crystallographic group as well as in the case when it is a dual group. Consequently the method for obtaining a selection rule is applicable to the investigation of various processes with and without account of the spin-orbit interaction in the unperturbed Hamiltonian. "The author thanks V. A. Chaldy*shev and V. Ye. Khartsiyev for suggesting the topic, and V. A. Chaldy*shev for guidance." Orig. art. has: 28 formulas.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gusdarstvennom universitete im. V. V. Kuyby*sheva (Siberian Physico-technical Institute and the Tomsk State University).



L 18241-65

ACCESSION NR: AP5000669

SUBMITTED: 02Jan64

ENCL: 00

SUB CODE: GP, SS NR REF SOV: 005 OTHER: 007

Card 3/3

KARAVAYEV, G.I. (g.Beregovo)

Mariia Adol'fovna Krulik. Med.sestra 18 no.8:42 Ag '59.
(MIRA 12:10)
(KRULIK, MARIIA ADOL'FOVNA)

L 21917-66

ACC NR: AP6014455 SOURCE CODE: UR/0219/65/059/001/0010/0014

AUTHOR: Karavayev, G. M.--Karavaev, G. M. 27 B

ORG: Department of Normal Physiology/headed by Professor M. G. Zaikina/, Yaroslavl' Medical Institute (Kafedra normal'noy fiziologii Yaroslavskogo meditsinskogo instituta)

TITLE: Effect of physical stress on the rhythm of contractions of the heart deprived of spinal sensitive innervation

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 59, no. 1, 1965, 10-14

TOPIC TAGS: dog, EKG, pharmacology, autonomic nervous system, cardiovascular system

ABSTRACT: The spinal ganglia on both sides in segments D_1-D_5 were removed from five dogs of both sexes. The animals were subjected to physical stress on a treadmill running at 6 km per hour for 20 minutes. Standard electrocardiograms were recorded until the original rhythm or cardiac contraction was restored. Vegetative innervation was blocked by a dose of 0.2 mg/kg of atropine 10 minutes before the physical stress and 0.05 mg/kg of dihydroergotoxin 20 minutes before stress. The rhythm of cardiac contraction was diminished 20-25% after excision of the spinal ganglia; and physical stress caused a less pronounced increase in the rhythm of cardiac contraction than in normal animals. Twenty minutes after intravenous injection of dihydroergotoxin the rhythm of cardiac contraction was diminished by 15-20 beats a minute up to the time of the operation. Removal of the spinal ganglia was followed by a disturbance in the tone of the vagus and even more of the sympa-

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UDC: 612.176.4-06: 612.178.1/.2

L 21917-66
ACC NR: AP6011455

thetic nerves of the heart. This paper was presented by active member AMN SSSR V. V. Parin. Orig. art. has: 2 figures and 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 24Sep63 / ORIG REF: 013 / OTH REF: 005

Card 2/2 net

L 10760-63 EWP(j)/EPF(c)/EWT(l)/EPF(n)-2/EWT(m)/BDS--AFFTC/ASD/
SSD--Pc-4/Pr-4/Pu-4--RM/WW

ACCESSION NR: AP3003986 S/0089/63/015/001/0077/0079

AUTHOR: Karavayev, G. N.; Leongardt, A. D.; Shly*kov, Yu. P. 73

TITLE: Study of critical heat flux in forced flow of monoisopropylbiphenyl at a temperature below saturation

SOURCE: Atomnaya energiya, v. 15, no. 1, 1963, 77-79

TOPIC TAGS: burnout heat flux, monoisopropylbiphenyl, nuclear reactor coolant

ABSTRACT: The burnout heat flux of subcooled monoisopropylbiphenyl was studied experimentally in a closed-circulation loop at flow velocities of 4.24 and 6.27 m/sec and subcooling temperatures from 120 to 195C. The test section (Fig. 1 of Enclosure) consisted of an electrically heated test element (plates 6 and 8 mm wide, 0.2 mm thick, and 125 mm long) inserted into the ceramic tube through which the coolant was passed. In most of the test runs the burnout flux was achieved by slowly increasing the electric power input

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L 10760-63

ACCESSION NR: AP3003986

while maintaining constant pressure, temperature, and velocity of the coolant. The burnout of the plate (corresponding to the burnout flux) was detected instrumentally. The critical heat load was varied 1) from 3.7×10^6 to 4.8×10^6 kcal/m^2·hr at a flow velocity of 6.3 m/sec and subcooling temperature from 124 to 190C and 2) from 2.7×10^6 to 3.6×10^6 kcal/m^2·hr at a flow velocity of 4.24 m/sec and subcooling temperatures from 120 to 195C. The error in determining the critical heat load amounted to 4.5%. The results obtained are shown in Fig. 2 of Enclosure. It is concluded that for monoisopropylbiphenyl the burnout heat flux, like that for other fluids, varies linearly with respect to subcooling. The close distribution of the data points correponding to pressure variations from3 to 6 atm with respect to the straight line indicates that the effect of pressure (in the range studied) on burnout flux is weak. The experimental data did not agree with several criterial relationships proposed by others for determining burnout flux. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 230ct62 DATE ACQ: 08Aug63 ENCL: 02

SUB CODE: 00 NO REF SOV: 003 OTHER: 000

Card 2/2

L 36730-65 EPF(c)/EPF(n)-2/EPR/EWG(j)/EPA(s)-2/EWA(h)/EWP(j)/EWT(l)/EWT(m)/EWG(m)/EWP(b)/T/EWA(l)/EWP(t) Pc-4/Pr-4/Ps-4/Pu-4/Peb RM/DJ/GS

ACCESSION NR: AT5007898 S/0000/64/000/000/0047/0055

AUTHOR: Vol'f-Epshteyn, A. B.; Karavayev, G. N.; Krichko, A. N.; Medzhibovskiy, B. A.

TITLE: An organic heat-transfer agent for nuclear reactors based on the by-products of cumene production

SOURCE: Moscow. Institut atomnoy energii. Issledovaniya po primeneniyu organicheskikh teplonositeley-zamedliteley v energeticheskikh reaktorakh (Research on the use of organic heat-transfer agents and moderators in power reactors). Moscow, Atomizdat, 1964, 47-55

TOPIC TAGS: organic reactor coolant, thermal reactor, radiation polymerization, power reactor, infrared spectroscopy, heat transfer agent, cumene production, polyalkylbenzene resin, biphenyl derivative, catalytic hydrogenation

ABSTRACT: The authors investigated the possibility of obtaining an organic heat-transfer agent whose radiation-thermal resistance would be comparable to that of monoisopropylbiphenyl from the by-products of isopropylbenzene (cumene) production. A polyalkylbenzene resin was used as the raw material. An investigation of the chemical composition of the resin revealed that up to 55% of the hydrocarbons in

Card 1/2

L 36730-65

ACCESSION NR: AT5007898

the resin are derivatives of biphenyl and biphenylalkanes. The boiling point of the resin was 310 - 365C for fractions obtained at 200 - 300C. Hydrogenation was carried out in the presence of an Al-Co-Mo catalyst under a hydrogen pressure of 30 - 80 kg/cm^2 at 350 - 390C. The heat capacity, density, and viscosity were measured within ±2%, ±0.5%, and ±1%, respectively. The decomposition rate of the heat-transfer agent under the simultaneous influence of radiation and temperature was examined in a temperature range of 250 - 400C. Each test lasted from 20 - 22 hrs. The authors conclude that the rate of formation of polymers under the influence of irradiation is the same for polyalkylbenzene resin and monoisopropylbiphenyl. The transition temperature was 380 - 390C. In addition, the corrosive activity of this coolant is no different from that of the other fluids investigated. Orig. art. has: 8 figures, 1 table and 1 formula.

ASSOCIATION: Institut atomnoy energii, Moscow (Institute of Atomic Energy)

SUBMITTED: 01Aug64 ENCL: 00 SUB CODE: NP, OC

NO REF SOV: 000 OTHER: 000

Card 2/2

KARAVAYEV, I.

KARAVAYEV, I., kandidat tekhnicheskikh nauk; GOTOVTSEV, V., kandidat tekhnicheskikh nauk.

Hydropneumatic cleaning of water pipelines. Zhil.-kom.khoz. 4 no.8:16-18 '54. (MLRA 8:3)
(Water pipes)

KARAVAYEV, I. I.

USSR/Chemistry - Chemical engineering; Pipe lines FD-1737

Card 1/1 : Pub. 50-13/18

Author : Karavayev, I. I., Cand Tech Sci

Title : Hydropneumatic removal of deposits from pipe lines

Periodical : Khim. prom., No 1, 52-53, Jan-Feb 1955

Abstract : Recommends that clogged water pipes be cleaned by passing a stream of water and compressed air through them. One figure.

Institution : All-Union Scientific Research Institute of Railroad Transportation

KARAVAYEV, I.I.

A gear-pump type proportionating feeder with automatically controlled electric drive. Vod. i san. tekh. no.11:31-32 N '59.
(MIRA 13:3)

(Water--Purification)

KARAVAYEV, I.I.; REZNIK, N.F. (g. Babushkin)

Clarifiers with rotating water distributors and their operation. Vod.i san.tekh. no.9:15-19 S '59. (MIRA 12:12)
(Water--Softening)

28(5) SOV/32-25-8-42/44

AUTHORS: 1) Rudyakov, Z. Z., 2) Lavrov, G. V., 3) Kobus, A. A., 4) Karavayev, I. I., 5) Krichever, A. S., Litovchin, B. D., Petrashevich, N. L.

TITLE: News in Brief

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 8, pp 1016-1018 (USSR)

ABSTRACT: 1) The author reports on a machine he designed for testing the friction coefficient of sliding (FCS). The machine (Fig) has an electromotor which rotates wheels of various sizes (diameter 100-800 mm) on a rail. The rail is pressed with a hydraulic press toward the wheel and is connected to a dynamometer. To investigate the (FCS) the author used an oscillograph MVO-2. 2) The author reports on a device for testing the adhesiveness of galvanic coatings by the method of tare blows. The device (Fig) is a plate with hemispherical hollows (30, 24, 22, 20, 18, 16, and 14 mm diameter (D)) on which a weight (1 kg) having a percussion pin on its end (D = 16 mm with a hemisphere having a D of 5 mm in the center) is dropped from varying heights. The sample is put on this plate. According to

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the height of falling of the weight and the greater the hollow beneath it, the greater is the load and therefore the deformation of the coating. 3) The author recommends the use of a "viniplast" thermostat flask for processing 6 roentgenograms, which has a capacity of 250 ml (Fig). 4) The author recommends the use of a gear pump with water lubrication, for laboratories when small quantities of a liquid have to be pumped (Fig). The two gears of the pump rotate in rubber bearings. The driving wheel is driven by a motor type MUN-100/80 (220 v, 100 w, 2200 rpm). Dimensions of the pump are 65 × 110 × 50 mm, diameter of the gears is 37 mm, capacity approximately 20 l/min. 5) The authors developed a universal device for the determination of greater stresses. The device is a separator with several balls with a diameter of 20-24 mm and a series of steel lamina (steel 3) with a thickness of 15-25 mm. One of the steel lamina serves as a standard on which the balls having the desired diameter are impressed with a pressure of 5, 10, 15, 20, 25, 30, 35, and 40 t. The device is installed at the spot where stress is being measured. Each ball makes an impression on the lamina under the given stress and the diameter of the impression is measured. The strength trans-

mitted by the ball is calculated from a diagram (Fig). The sum of the obtained values equals the stress. There are 5 figures and 1 Soviet reference.

ASSOCIATION: 1) Dnepropetrovskiy institut zheleznodorozhnogo transporta (Dnepropetrovsk Institute of Railroad Transport) 2) Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy promyshlennosti (Scientific Research Institute of Technology of the Automobile Industry) 3) Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut (All-Union Scientific Research Institute of Tubes) 4) Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta (All-Union Scientific Research Institute of Railroad Transport)

KARAVAYEV, I.I.; REZNIK, N.F.; FILIPPOVA, L.S., red.; VOROTNIKOVA, L.F., tekhn. red.

[Flotation purification of sewage water from washing and steaming stations] Flotatsionnaia ochistka stochnykh vod promyvochno-proparochnykh stantsii i depo. Moskva, Vses.izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 19 p.
(MIRA 15:1)

(Sewage—Purification)

KARAVAYEV, I.I., kand.tekhn.nauk

Flotation system for waste water purification in railroad washing and steaming stations. Vest.TSNII MPS 19 no.6:59-61 '60. (MIRA 13:9)
(Railroads--Maintenance and repair) (Sewage--Purification)

GORSKAYA, N.F., inzh.; KARAVAYEV, I.I., kand.tekhn.nauk

Use of detergents for the cleaning of tank cars. Zhel. dor. transp. 43 no. 1:66-67 Ja '61. (MIRA 14:4)
(Tank cars--Cleaning)

KARAVAYEV, I.I., kand.tekhn.nauk

Mechanized washing of tank cars with cleansing agents. Biul.-tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. no.3:63-64 '62. (MIRA 15:5)

(Tank cars--Cleaning)

KARAVAYEV, I.I., kand.tekhn.nauk; REZNIK, N.F., inzh.

Flotation purification of sewage from petroleum products. Vod. i san. tekh. no.2:29-31 F '62. (MIRA 15:2)
(Sewage--Purification)

REZNIK, N.F.; KARAVAYEV, I.I.; GRISHIN, K.S.; PERFILOVA, S.P.

Purification of sewage. Put' i put.khoz. 7 no.7:19-20 '63.
(MIRA 16:10)

GINSBURG, M.I., inzh.; KARAVAYEV, I.I., kand. tekhn. nauk

Cleaning of oil soiled rails. Vest. TSNII MPS 25 no.1:37-41 '66. (MIRA 19:2)

KARAVAYEV, K.

Straw

Cable straw collector of the Odessa Province MTS, MTS 12, no. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

ZELENSKIY, G.G., kand.sel'skokhoz.nauk; KARAVAYEV, K.G.; LEBEL', L.D., kand.sel'skokhoz.nauk; MARGULIS, I.A.

New Soviet breed of wool goats. Zhivotnovodstvo 24 no.9:67-70 S '62. (MIRA 15:12)

1. Direktor Leninabadskoy stantsii po iskusstvennomu osemeniyu sel'skokhozyzystvennykh zhivotnykh (for Karayev). 2. Direktor Leninabadskogo gosucarstvennogo plemennogo rassadnika koz (for Margulis).

(Soviet Central Asia--Goat breeds)

KARAVAYEV, M.

In the joint fire brigade of the economic council. Pozh.delo 6 no.9:5 S '60. (MIRA 13:9)
(Fire prevention)

KARAVAYEV, N. M. (Moskva); VENER, R. A. (Moskva); RUMYANTSEVA, Z. A. (Moskva); SHEVCHENKO, B. I. (Moskva); MAMAYEVA, A. M. (Moskva)

Effect of slow heating by ancient intrastratal fires on the composition and properties of Fan Yagnob coal. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.6:106-201 N-D '62.
(MIRA 16:1)

(Tajikistan—Coal geology) (Coal—Testing)

AUTHORS: Petrov, Yu. I., Karavayev, M. M. 153-58-1-18/29

TITLE: The Equilibrium in the Synthesis of Nitric Acid in the Vapor Phase (Ravnovesiye pri parofaznom sinteze azotnoy kisloty)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 119-122 (USSR)

ABSTRACT: The authors introductorily give a survey of publications (references 1 to 5). Since there is always an equilibrated mixture of NO_2 and N_2O_4, the authors wanted to investigate the equilibrium of the synthesis referred to in the title, if and when 3 reactions take place at the same time: $4NO_2 + 2H_2O + O_2 \rightleftarrows 4HNO_3$ (1), $2N_2O_4 + 2H_2O + O_2 \rightleftarrows 4HNO_3$ (2) and $N_2O_4 \rightleftarrows 2NO_2$ (3), so more as this problem has never been dealt with in publications. The values of the equilibrium constants of the individual reactions which were calculated by means of the isobar-isothermic potential (references 6 to 9) are given in table 1. The equilibrated gas concentrations for the initial relations can be found by various methods. The authors found it convenient to find these concentrations

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first by separated HNO_3-synthesis by way of NO_2 and N_2O_4. In this case, multistage equations with one unknown are solved before by the method of selection. After the aforesaid concentrations were found with the synthesis according to (1) and (2), the shares of the participation of the partial processes in the total process are found by means of the method of selection (taking account of the equilibrium according to the equation (3)) and the real equilibrated concentrations are consequently found, too. The calculated values of these concentrations of HNO_3 and of the transformation degrees of the nitrogen oxides in HNO_3 are given in table 2 for the stoichiometric relation of the components in the temperature series from 325 to 425 °K and with the pressure from 1 atmosphere absolute pressure. According to the increased temperature, the degree of transformation of NO_2 into HNO_3 decreases more rapidly than the degree of N_2O_4. According to equation (2), higher degrees of transformation are achieved than according to (1), but in the total process the synthesis by way of NO_2 prevails. Since the degree of dissociation from N_2O_4 to NO_2, increases with increasing temperature, the share of the synthesis by way of NO_2 in the total process increases also. Table 3 shows the

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calculations concerning the influence of the water- and oxygen-concentration on the equilibrated transformation of the nitrogen oxides at 375°K. It hence results that according to the increasing content of steam, the transformation degree of these oxides in HNO_3 increases continuously. The degree of transformation first increases according to the increasing content of oxygen, with approximately 3 mol it exceeds the culminating point in order to decrease subsequently. A satisfactory conformity of the calculated concentrations with those found by Dzhouns (Jones, ref. 2) indicates that the authors tackled the solutions of the set problems in the right way. There are 4 tables and 9 references, 2 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii neorganicheskikh veshchestv (Ivanovo Chemical Technological Institute, Chair for the Technology of Inorganic Substances)

SUBMITTED: September 7, 1957

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KARAVAYEV, M.M.; KIRILLOV, I.P.

Synthesis of nitric acid in the gas phase. Nauch.dokl.vys. shkoly; khim.i khim.tekh. no.1:197-201 '59. (MIRA 12:5)

1. Predstavlena kafedroy tekhnologii neorganicheskikh veshchestv Ivanovskogo khimiko-tekhnologicheskogo instituta.
(Nitric acid)

5 (1, 2)

AUTHORS: Karavayev, M. M., Kirillov, I. P. SOV/153-2-2-17/31

TITLE: Thermal Decomposition of Some Nitrates (Termicheskoye razlozheniye nekotorykh nitratov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 2, pp 231-237 (USSR)

ABSTRACT: Data from publications concerning the properties of metal nitrates are often contradictory, especially as far as the temperature of the decomposition is concerned. Industrial catalysts however, are produced (as oxides) from metal nitrates and used as such. The present article is dedicated to the thermographic investigation of the process of thermal decomposition of nitrates of Al, Cr, Fe, Mn, Co and Ni. An analogous investigation was carried out with samples applied on silica gel. The heat curves were registered by means of N. S. Kurnakov's pyrometer. The results achieved are shown in thermographs 1-14. Nr 1-6 show the processes for nitrates of Al, Cr, Fe, Mn, Co and Ni. Nr 7-12 the same for the decomposition of these nitrates in an air current, applied on silica gel. In the numbers 7-12 a third curve appears, illustrating the HNO_3 concentration in the products of

decomposition according to the temperatures. As can be seen in the thermograph, the nitrates of trivalent metals (Al, Cr, and Fe) give 2 endothermal effects each. Aluminum nitrate still has a slight endothermal effect at a temperature of 308-336°, the reason for which is still unexplained. The temperature intervals of the effects occurring with the decomposition of chromium nitrate, are higher than in reference 7 and 8. The authors found that the second effect (124-160° and 86-137° on silica gel) is not only the result of boiling the fusion, but also of a simultaneous decomposition of the nitrate. The thermograph of pure silica gel (Fig 3) only has an endothermal effect (85-100°) in connection with the removal of the adsorbed moisture. In the air current (Fig 4) silica gel only has one effect - at a temperature of 54°, a rapid heating of 76-100° followed by a cooling down to 82°. The first endothermal effects during the decomposition of the nitrates of bivalent metals (Mn, Co, and Ni) within 22-51° are caused by melting the nitrate in the crystallizing water. With further heating, a number of endothermal effects develops, different for each nitrate. 2. The effect in the case of manganese nitrate consists of 2 effects: a. 117-161° - boiling with the

separation of some water. b. cooling at a temperature of 186° down to 168°. Cobalt nitrate has three endothermal effects: a. 32-51° (melting), b. 118-151° boiling with the partial removal of the crystallizing water; c. 191-245° intensive decomposition of the nitrate. An effect within 235-240° could not be deciphered. Cobalt nitrate only shows two effects when applied on silica gel: a. at 76-138° and b. at 210-235°. The effect at 110-131° is connected with a process occurring on silica gel. A third effect (290-337°) is the decomposition of the basic salt or of the remaining part of the nitrate. Nickel nitrate has three endothermal effects on silica gel, in all cases: a. at 45-132°, b. at 147-156° and c. at 272-290°. The authors carried out experiments with the HNO_3 synthesis in a bulb serving for measuring the HNO_3 concentration. HNO_3 is a primary decomposition product of the nitrate, or a product of the reciprocal action of N_2O_5 and H_2O, but not a product of the

synthesis with NO_2 and H_2O. The temperatures of the developing HNO_3 vapors in the gas phase were determined. One may regard these temperatures as being equal to the original temperatures of the nitrate decomposition. There are 4 figures, 1 table, and 8 references, 5 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut; Kafedra tekhnologii neorganicheskikh veshchestv (Ivanovo Institute of Chemical Technology, Chair of Technology of Inorganic Substances)

SUBMITTED: January 10, 1958

KIRILLOV, I.P.; KARAVAYEV, M.M.

Investigating the catalytic synthesis of nitric acids in the gas phase. Izv.vys.uchob.zav.; khim.i khim.tekh 2 no.4: 553-557 '59. (MIRA 13:2)

1. Ivanovskiy khimiko-tekhnologicheskiy institut. Kafedra tekhnologii neorganicheskikh veshchestv.
(Nitric acid) (Catalysts)

KARAVAYEV, M.M.; SKVORTSOV, G.A.

Equilibrium in the formation of nitrous acid in the gas phase. Zhur.fiz.khim. 36 no.5:1072-1074 My '62. (MIRA 15:8)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.
(Nitrous acid) (Phase rule and equilibrium)

KAGANSKIY, I.M.; KARAVAYEV, M.M.; SUKACHEV, B.P.; LYUBCHENKO, T.V.

Pressure of saturated vapors over highly concentrated fuming nitric acid. Zhur. prikl. khim. 34 no.5:1087-1092 My '61. (MIRA 16:8)

1. Lisichanskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza.

(Vapor pressure) (Nitric acid)

KARAVAYEV, M.M.; ZHANTALAY, V.A.

Density and viscosity of nitrogen tetroxide solutions in 70% nitric acid. Zhur. fiz. khim. 37 no.12:2771-2773 D '63.
(MIRA 17:1)

1. Lisichanskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza.